# Measuring Travel Time Reliability

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Why Focus on Travel Time Reliability?

- Multiple audiences
- Travelers can respond effectively
- Works across modes
- Works at multiple levels
- Regardless of trip length

Our Audiences

- The measure needs to be meaningful to:
  - The motorist (commuter, parent, retiree, etc.)
  - Freight carriers
  - Transit operators
  - Agency operations staff
  - Agency management
  - Elected/appointed decision-makers
    - Federal, state, and local
  - Planners
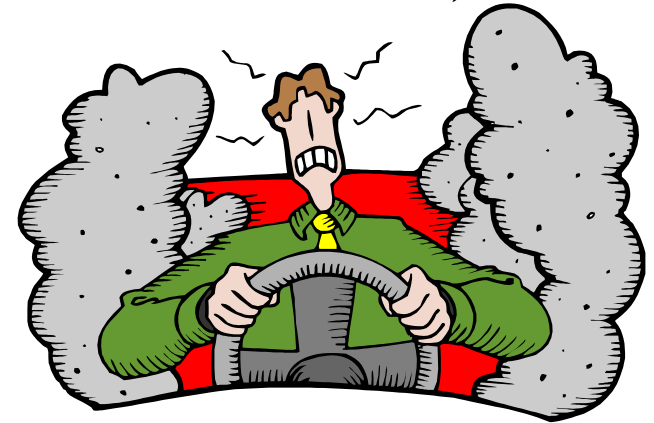
Why Do People Care About Reliability?

- Commuters
  - Getting to work/appointments on time
  - Day care fees!
- Truckers
  - "Just in time" delivery
- Transit
  - On time performance = customer satisfaction
- Business
  - Reducing wasted time
  - Predictable results
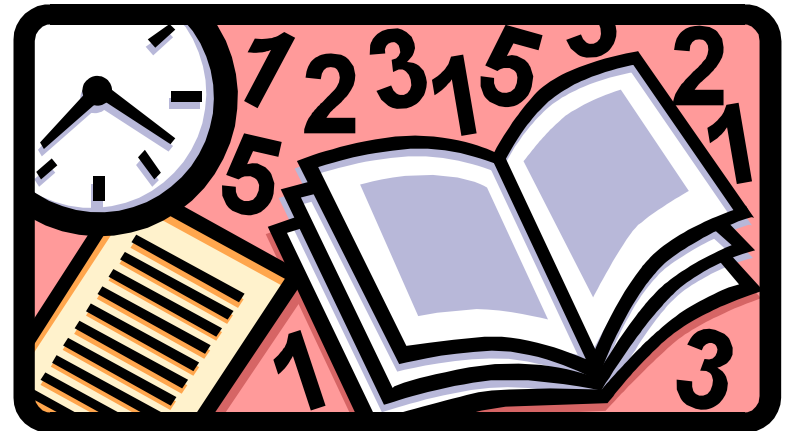
Measuring Travel Time Reliability

Why Does the Profession Care?

- What we can't do
- Some things we can do
- We can impact reliability!
- We can demonstrate performance!

The Challenges

- Not a traditional focus
- Not a traditional measure
- No commonly accepted measure
- Needed: a lot of data
- Data quality and completeness
- Little archiving
- Reliability varies

How is Travel Time Reliability Measured?

- Focus
  - "How often will I arrive within an allowable window?"
  - "How much time to I need to allow in order to arrive within a specified window at least X% of the time?"
- In relation to what?
- The range:
  - Timespan
  - Percentage

Measure on Which We Focused: Buffer Index

- Definition
- Source
- Interpretation
- Why have an index?
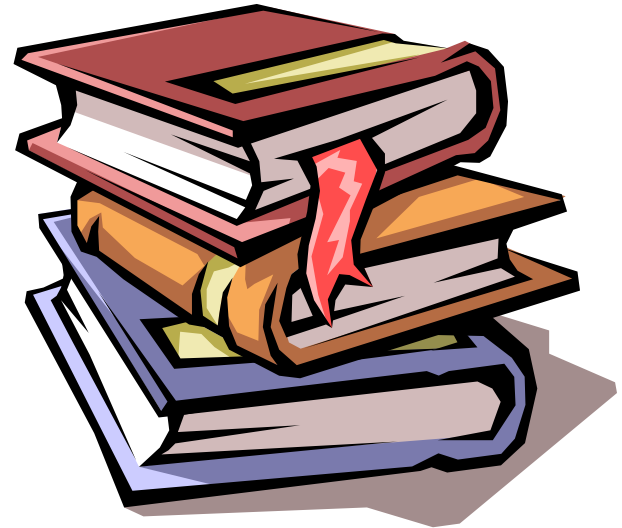
So What Do I Do With It?

- As a motorist, business, or media purveyor
- A possible broadcast

So What Do I Do With It?

- As an agency

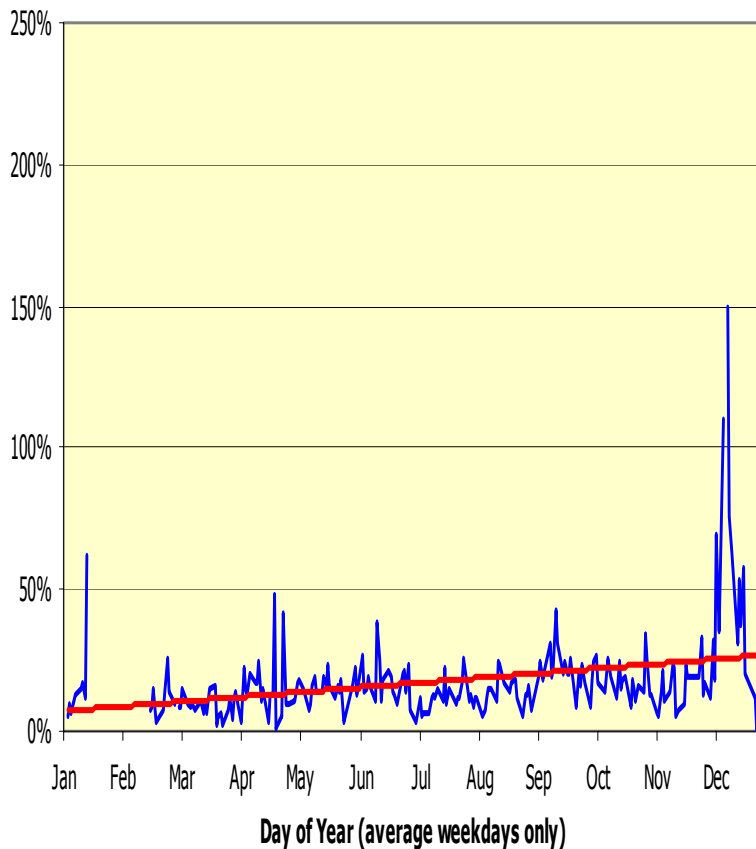- As an elected/appointed official

What We Did

- Ten freeway management centers
- Process the data
- Target measures
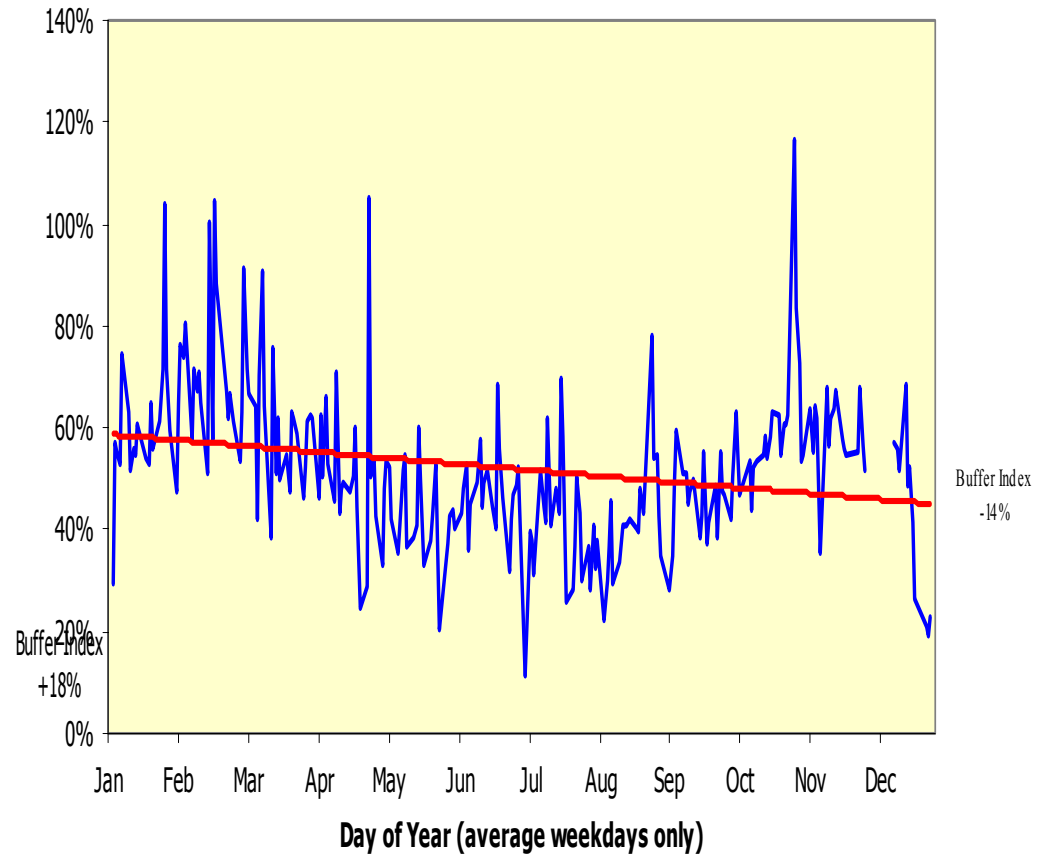- Analyze the results
- Caveats

Reliability Throughout the Year

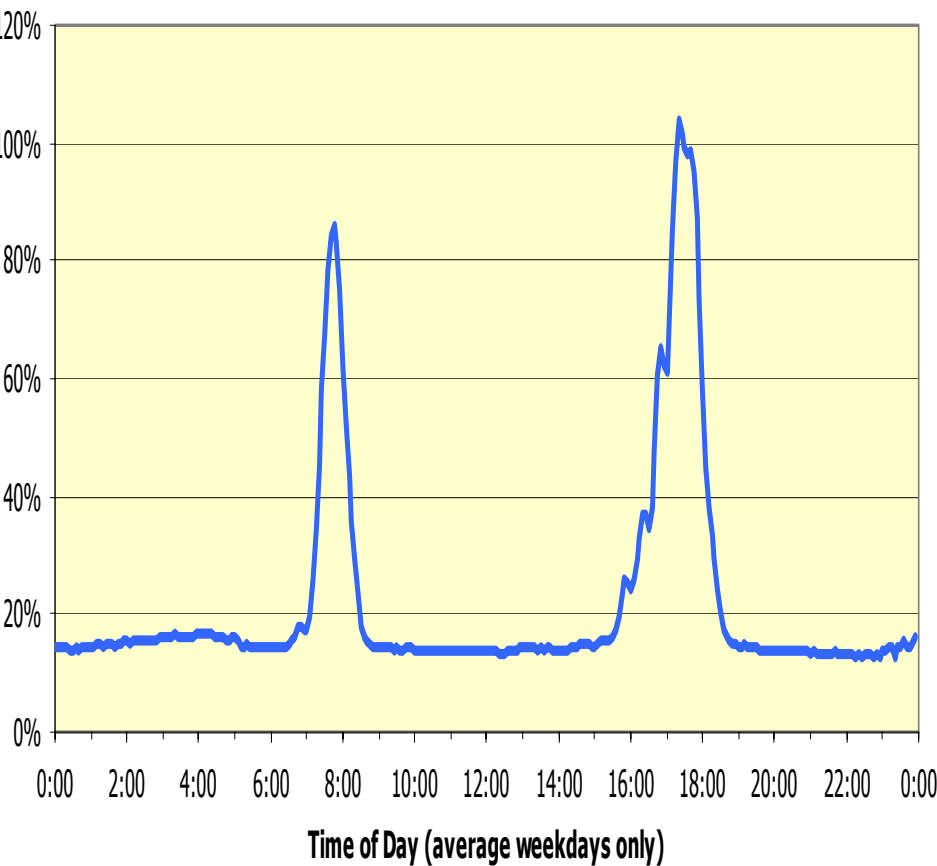Buffer Index in Detroit by Day of Year

Buffer Index in Phoenix by Day of Year

Day of Year (average weekdays only)

Day of Year (average weekdays only)

Buffer Index +18%

Buffer Index -14%

Measuring Travel Time Reliability

12

Buffer Index

Buffer Index

Reliability by Time of Day

Buffer Index in San Antonio

Buffer Index in Los Angeles by Time of Day

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13
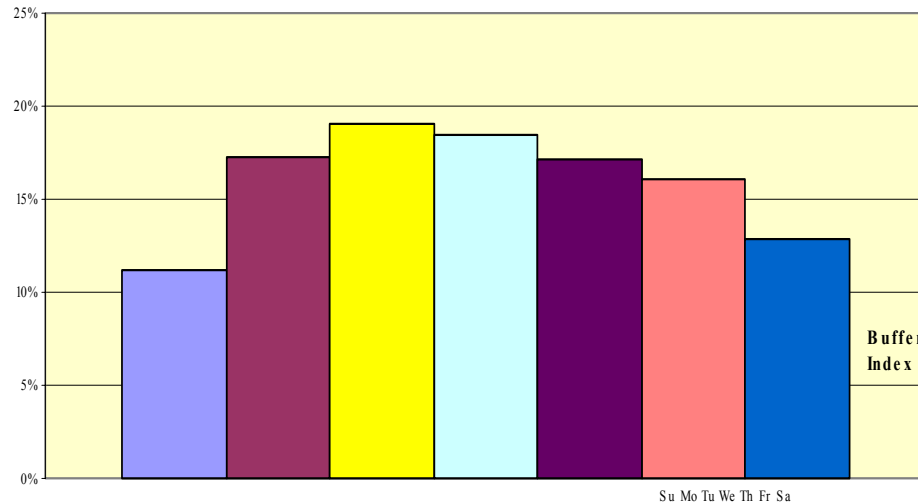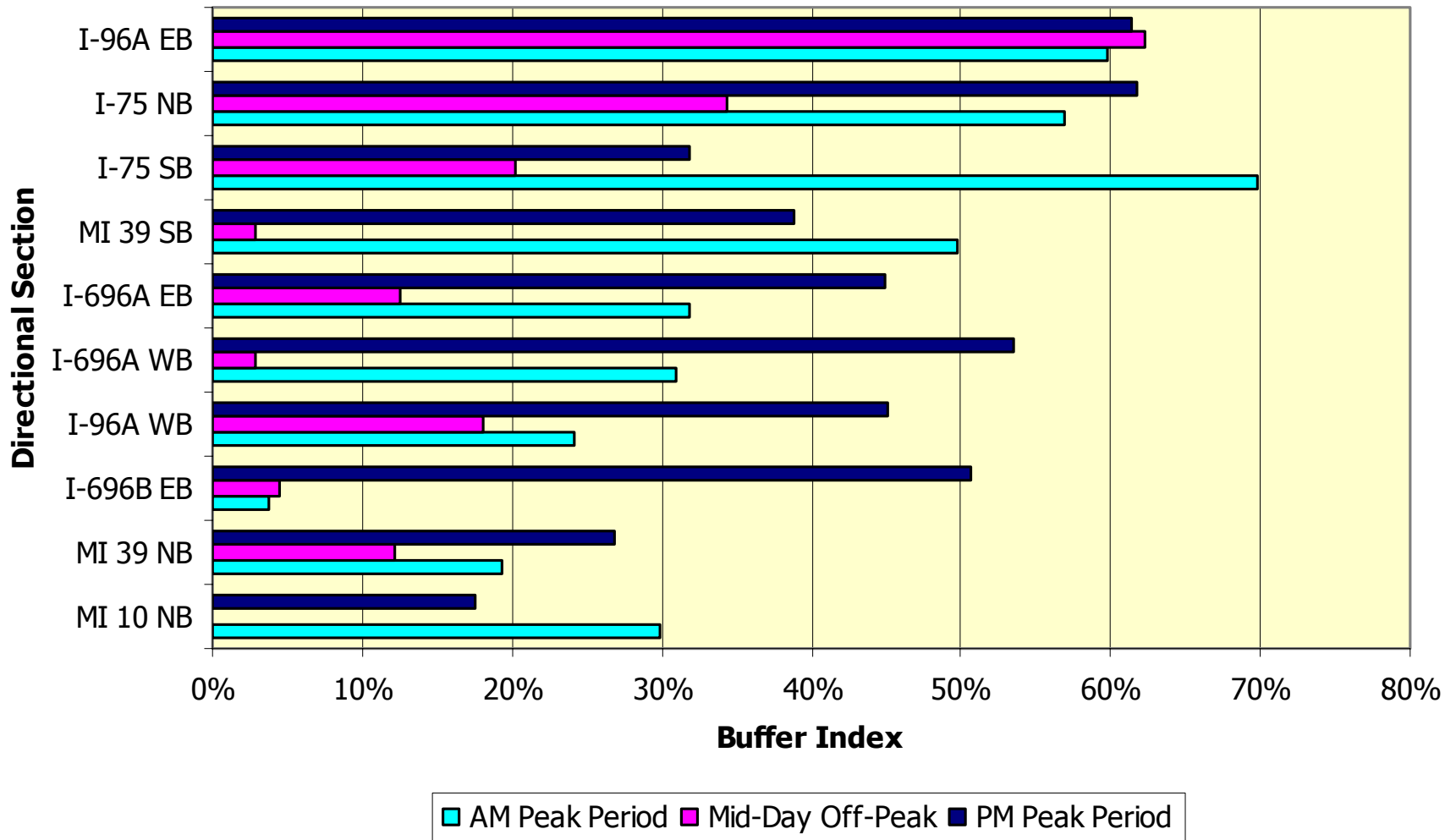
Reliability by Day of Week
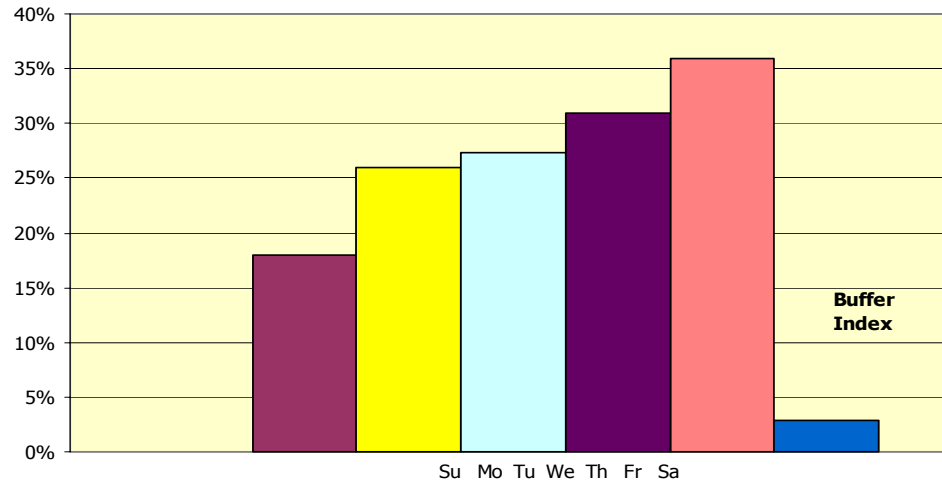
Buffer Index in Houston by Day of the Week (24-hr averages)

Buffer Index in Hampton Roads by Day of the Week (24-hr averages)

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Reliability by Major Route

Buffer Index in Detroit by Directional Sections

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Further Steps

- Second year of data for trends

- Analyze more locations

- Graphic illustrations

- Provide guidance

- Build support

- Increase data archival